

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: T. A. Soloka Examiner #: 74583 Date: 5/19/04
 Art Unit: 1626 Phone Number 30 2-6709 Serial Number: 09/622,001
 Mail Box and Bldg/Room Location: 5th floor Results Format Preferred (circle): PAPER DISK E-MAIL
5A21

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Process for organic (polys) using catalytic imide cpts

Inventors (please provide full names): Takatsuki, Yasutaka Ishii,
Takahiro Iwamura and Tatsuya Nakano

Earliest Priority Filing Date: 12/9/99

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

2 propanol + ethyl acrylate
 in the presence of
 molecular oxygen and
 N-hydroxyphthalimide

2-hydroxy-4,4-dimethyl-2-butylolactone
 See attached. Pls display hit structure
 1b1b & Ab.

Thanks

STAFF USE ONLY

Point of Contact:

Searcher: Alexandra Wacławiw

Technical Info. Specialist

Searcher Phone: 301-6A02 Tel: 308-4491

Searcher Location: _____

Date Searcher Picked Up: 5-20-04

Date Completed: 5-20-04

Searcher Prep & Review Time: 12

Clerical Prep Time: _____

Online Time: 18

Type of Search

NA Sequence (#) _____

AA Sequence (#) _____

Structure (#) (1)

Bibliographic _____

Litigation _____

Fulltext _____

Patent Family _____

Other _____

Vendors and cost where applicable

STN \$ 2.2⁰⁰

Dialog _____

Questel/Orbit _____

Dr.Link _____

Lexis/Nexis _____

Sequence Systems _____

WWW/Internet _____

Other (specify) _____



STIC Search Report

Biotech-Chem Library

STIC Database Tracking Number: 122530

TO: Taofiq Solola
Location: REM/5A21/5C18
Art Unit: 1626
Thursday, May 20, 2004

Case Serial Number: 09/622001

From: Alex Waclawiw
Location: Biotech-Chem Library
Rem 1A71
Phone: 272-2534

Alexandra.waclawiw@uspto.gov

Search Notes

*Lack of written description
scope of amendment. In re Wood factors.
Indefinite*

Solola 09/622,001

=> d his

(FILE 'CAPLUS' ENTERED AT 12:38:32 ON 20 MAY 2004)
DEL HIS Y

FILE 'REGISTRY' ENTERED AT 12:40:05 ON 20 MAY 2004
E 2-PROPANOL/CN

L1 1 S E3
E ETHYL ACRYLATE/CN
L2 1 S E3
L3 1 S 13416-69-8
L4 STR 13416-69-8
L5 3 S L4 FUL FAM
SAVE L5 TEMP SOLOLAFAM/A

FILE 'CAPLUS' ENTERED AT 12:41:23 ON 20 MAY 2004

L6 20 S L5
L7 46168 S L1
L8 7121 S L2
L9 5 S L6 AND L7 AND L8
L10 9 S L5/P
L11 5 S L10 NOT L9

Solola 09/622,001

=> fil reg
FILE 'REGISTRY' ENTERED AT 12:43:02 ON 20 MAY 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 19 MAY 2004 HIGHEST RN 683745-80-4
DICTIONARY FILE UPDATES: 19 MAY 2004 HIGHEST RN 683745-80-4

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

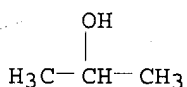
Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> d que 11; d 11
L1 1 SEA FILE=REGISTRY ABB=ON PLU=ON 2-PROPANOL/CN

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN 67-63-0 REGISTRY
CN **2-Propanol (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Isopropyl alcohol (8CI)
OTHER NAMES:
CN 1-Methylethanol
CN 1-Methylethyl alcohol
CN 2-Hydroxypropane
CN 2-Propyl alcohol
CN Alcojel
CN Alcosolve 2
CN Autosept
CN Avantin
CN Avantine
CN Combi-Schutz
CN Dimethylcarbinol
CN Hartosol
CN Imsol A
CN IPA
CN IPS 1
CN IPS 1 (alcohol)
CN iso-Propanol
CN iso-Propyl alcohol
CN Isohol
CN Isopropanol
CN Lutosol
CN n-Propan-2-ol
CN NSC 135801

CN Petrohol
 CN PRO
 CN Propol
 CN sec-Propanol
 CN sec-Propyl alcohol
 CN Sterisol Hand Disinfectant
 CN Takineocol
 CN Tokuso IPA
 CN Virahol
 FS 3D CONCORD
 DR 8013-70-5
 MF C3 H8 O
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS,
 BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB,
 CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB,
 DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2,
 ENCOMPAT, ENCOMPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB,
 IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA,
 PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USAN,
 USPAT2, USPATFULL, VETU, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

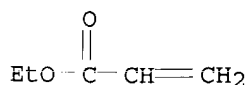
46072 REFERENCES IN FILE CA (1907 TO DATE)
 661 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 46146 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 8 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> d que l2; d l2

L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON "ETHYL ACRYLATE"/CN

L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 140-88-5 REGISTRY
 CN 2-Propenoic acid, ethyl ester (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Acrylic acid ethyl ester (6CI, 8CI)
 OTHER NAMES:
 CN 2-Propenoic acid ethyl ester
 CN Ethyl 2-propenoate
 CN **Ethyl acrylate**
 CN Ethyl acrylic ester
 CN Ethyl propenoate
 CN NSC 8263
 FS 3D CONCORD
 MF C5 H8 O2

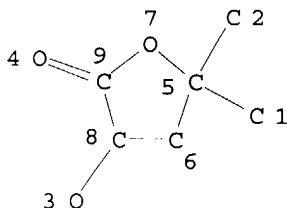
CI COM
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHM, CSNB, DETHERM*, DIPPR*, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

7108 REFERENCES IN FILE CA (1907 TO DATE)
 1092 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 7118 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 209 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> d que stat l5
 L4 STR



NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE
 L5 3 SEA FILE=REGISTRY FAM FUL L4

100.0% PROCESSED 274 ITERATIONS
 SEARCH TIME: 00.00.01

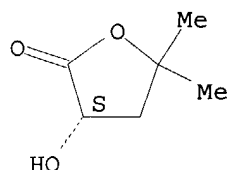
3 ANSWERS

=> d ide can l5 1-3

L5 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 497157-66-1 REGISTRY
 CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl-, (3S)- (9CI) (CA INDEX

NAME)
 FS STEREOSEARCH
 MF C6 H10 O3
 SR CA
 LC STN Files: CA, CAPLUS, CASREACT

Absolute stereochemistry. Rotation (-).



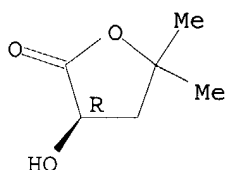
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1 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 138:170157

L5 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 72496-35-6 REGISTRY
 CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl-, (R)- (9CI) (CA INDEX NAME)
 FS STEREOSEARCH
 MF C6 H10 O3
 LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX
 (*File contains numerically searchable property data)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

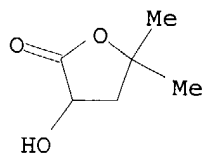
1 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 92:58987

L5 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2004 ACS on STN
 RN 13416-69-8 REGISTRY
 CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Valeric acid, 2,4-dihydroxy-4-methyl-, γ -lactone (7CI, 8CI)
 OTHER NAMES:
 CN α -Hydroxy- γ , γ -dimethyl- γ -butyrolactone
 CN 3-Hydroxy-5,5-dimethyldihydrofuran-2-one
 CN 4,4-Dimethyl- α -hydroxy- γ -butyrolactone

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FS 3D CONCORD
DR 72446-71-0
MF C6 H10 O3
LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CASREACT, CHEMINFORMRX,
TOXCENTER, USPATFULL
(*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

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19 REFERENCES IN FILE CAPLUS (1907 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 139:9308
REFERENCE 2: 138:206865
REFERENCE 3: 137:192769
REFERENCE 4: 137:140911
REFERENCE 5: 136:294727
REFERENCE 6: 136:70066
REFERENCE 7: 135:280515
REFERENCE 8: 135:95159
REFERENCE 9: 135:93003
REFERENCE 10: 135:93001

=> fil caplus

FILE 'CAPLUS' ENTERED AT 12:43:38 ON 20 MAY 2004
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FILE COVERS 1907 - 20 May 2004 VOL 140 ISS 21
FILE LAST UPDATED: 19 May 2004 (20040519/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

'OBI' IS DEFAULT SEARCH FIELD FOR 'CAPLUS' FILE

=> d que nos l9

```
L1          1 SEA FILE=REGISTRY ABB=ON  PLU=ON  2-PROPANOL/CN
L2          1 SEA FILE=REGISTRY ABB=ON  PLU=ON  "ETHYL ACRYLATE"/CN
L4          STR
L5          3 SEA FILE=REGISTRY FAM FUL L4
L6          20 SEA FILE=CAPLUS ABB=ON  PLU=ON  L5
L7          46168 SEA FILE=CAPLUS ABB=ON  PLU=ON  L1
L8          7121 SEA FILE=CAPLUS ABB=ON  PLU=ON  L2
L9          5 SEA FILE=CAPLUS ABB=ON  PLU=ON  L6 AND L7 AND L8
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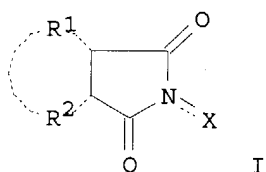
=> d que nos l11

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L2          1 SEA FILE=REGISTRY ABB=ON  PLU=ON  "ETHYL ACRYLATE"/CN
L4          STR
L5          3 SEA FILE=REGISTRY FAM FUL L4
L6          20 SEA FILE=CAPLUS ABB=ON  PLU=ON  L5
L7          46168 SEA FILE=CAPLUS ABB=ON  PLU=ON  L1
L8          7121 SEA FILE=CAPLUS ABB=ON  PLU=ON  L2
L9          5 SEA FILE=CAPLUS ABB=ON  PLU=ON  L6 AND L7 AND L8
L10         9 SEA FILE=CAPLUS ABB=ON  PLU=ON  L5/P
L11         5 SEA FILE=CAPLUS ABB=ON  PLU=ON  L10 NOT L9
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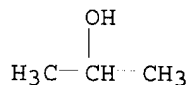
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L9 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:235931 CAPLUS
DOCUMENT NUMBER: 136:294727
TITLE: Method for preparing organic compounds using imides
and nitric acids
INVENTOR(S): Ishii, Yasutaka; Tatsumi, Atsuo; Nakano, Tatsuya
PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 29 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

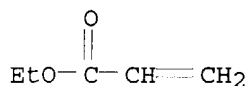
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|--|------------|
| JP 2002088077 | A2 | 20020327 | JP 2001-111912 | 20010410 |
| PRIORITY APPLN. INFO.: | | | JP 2000-209205 | A 20000711 |
| OTHER SOURCE(S): | | | CASREACT 136:294727; MARPAT 136:294727 | |
| GI | | | | |



- AB Disclosed is a highly selective method with high recovery rate for producing organic compds. by addition reaction and/or substitution reaction under gentle conditions. The addition and/or substitution reaction products are prepared by reacting radical forming compound with radical capturing compound in the presence of imide (I; R1 = alkyl; R2= aryl, or R1/R2 = aromatic or non-aromatic ring, and X = O or OH) and nitric acid or nitrous acid salt.
- IC ICM C07D307-33
ICS C07D209-48
- CC 27-11 (Heterocyclic Compounds (One Hetero Atom))
- IT 67-63-0, 2-Propanol, reactions 110-82-7, Cyclohexane, reactions 140-88-5, Ethyl acrylate 281-23-2, Adamantane
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of organic compds. by reacting radical-forming agent with radical-capturing agent in the presence of imide and nitric or nitrous acid)
- IT 108-93-0P, Cyclohexanol, preparation 108-94-1P, Cyclohexanone, preparation 700-58-3P, 2-Adamantanone 766-07-4P, Cyclohexyl hydroperoxide 5001-18-3P, 1,3-Adamantanediol 13416-69-8P, α -Hydroxy- γ,γ -dimethyl- γ -butyrolactone 99181-50-7P, 1,3,5-Adamantanetriol 276873-99-5P, Ethyl 2,4-dihydroxy-4-methylpentanoate
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of organic compds. by reacting radical-forming agent with radical-capturing agent in the presence of imide and nitric or nitrous acid)
- IT 67-63-0, 2-Propanol, reactions 140-88-5, Ethyl acrylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of organic compds. by reacting radical-forming agent with radical-capturing agent in the presence of imide and nitric or nitrous acid)
- RN 67-63-0 CAPLUS
- CN 2-Propanol (9CI) (CA INDEX NAME)



- RN 140-88-5 CAPLUS
- CN 2-Propenoic acid, ethyl ester (9CI) (CA INDEX NAME)

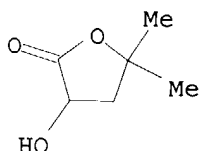


- IT 13416-69-8P, α -Hydroxy- γ,γ -dimethyl- γ -butyrolactone

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of organic compds. by reacting radical-forming agent with
 radical-capturing agent in the presence of imide and nitric or nitrous
 acid)

RN 13416-69-8 CAPLUS

CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl- (9CI) (CA INDEX NAME)



L9 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:736886 CAPLUS

DOCUMENT NUMBER: 135:280515

TITLE: (Meth)acrylate ester polymer for photoresist and
 photoresist composition

INVENTOR(S): Arai, Takashi; Funaki, Katsunori; Sudo, Shinji

PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

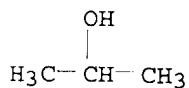
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

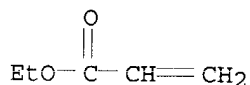
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--|----------|-----------------|----------|
| JP 2001278919 | A2 | 20011010 | JP 2000-93286 | 20000330 |
| PRIORITY APPLN. INFO.: | | | JP 2000-93286 | 20000330 |
| AB | The polymer involves repeating units substituted with acid-sensitive leaving group, another repeating units substituted with groups for enhancing adhesion to substrates, and [CH ₂ C(R ₁)CO ₂ R ₂] (R ₁ = H, Me; R ₂ = C ₃ -8 alkyl except tertiary alkyl). The photoresist composition contains the polymer and a photosensitive acid-generating agent. The composition shows good film-forming property associated with good alkali solubility and good adhesion to substrates. The composition is applied on a substrate, exposed, and developed to give a pattern in semiconductor device fabrication. | | | |
| IC | ICM C08F220-10 ICS C08F008-12; C08F220-12; C08K005-00; C08L033-04; G03F007-039; H01L021-027 | | | |
| CC | 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes) Section cross-reference(s): 38, 76 | | | |
| IT | 67-63-0, 2-Propanol, reactions 140-88-5, Ethyl acrylate 13416-69-8 RL: RCT (Reactant); RACT (Reactant or reagent) (monomer from; photoresist containing (meth)acrylate ester polymer involving acid-sensitive leaving group with good adhesion to substrate) | | | |
| IT | 67-63-0, 2-Propanol, reactions 140-88-5, Ethyl acrylate 13416-69-8 RL: RCT (Reactant); RACT (Reactant or reagent) (monomer from; photoresist containing (meth)acrylate ester polymer involving acid-sensitive leaving group with good adhesion to substrate) | | | |

Solola 09/622,001

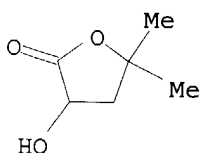
RN 67-63-0 CAPLUS
CN 2-Propanol (9CI) (CA INDEX NAME)



RN 140-88-5 CAPLUS
CN 2-Propenoic acid, ethyl ester (9CI) (CA INDEX NAME)

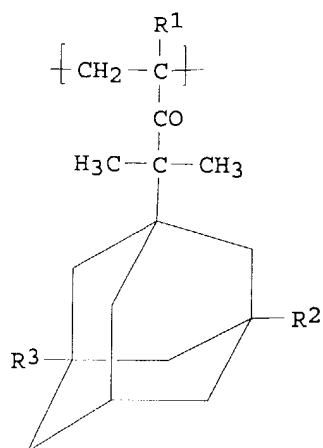


RN 13416-69-8 CAPLUS
CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl- (9CI) (CA INDEX NAME)

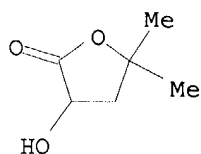


L9 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:347119 CAPLUS
DOCUMENT NUMBER: 134:346475
TITLE: Adamantyl-containing polymer for photoresist and
polymer composition for photoresist
INVENTOR(S): Gokochi, Toru; Okino, Takeshi; Asakawa, Koji; Shinoda,
Naomi; Funaki, Katsunori; Tsutsumi, Kiyoharu; Horai,
Akira; Inoue, Keizo
PATENT ASSIGNEE(S): Toshiba Corp., Japan; Daicel Chemical Industries, Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

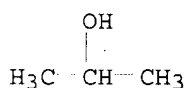
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------------|------|----------|-----------------|----------|
| JP 2001131232 | A2 | 20010515 | JP 1999-312329 | 19991102 |
| PRIORITY APPLN. INFO.: GI | | | JP 1999-312329 | 19991102 |



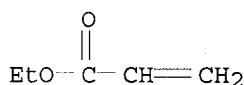
- AB The polymer is that having ≥ 1 adamantyl-substituted monomer unit I ($R_1 = H, Me$; $R_2, R_3 = H, OH$). The photoresist composition contains the polymer and a photosensitive acid-generating agent. The photoresist composition, showing good etching resistance, is suitable for photolithog. in semiconductor device fabrication.
- IC ICM C08F020-18
ICS C08F002-48; C08K005-00; C08L033-04; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76
- IT 75-16-1P, Methylmagnesium bromide 775-64-4P **13416-69-8P**
39917-38-9P 61065-61-0P 83406-09-1P, 3,5-Dihydroxy-1-adamantanecarboxylic acid 90271-20-8P 133220-72-1P 149522-08-7P
247029-13-6P 247029-14-7P 247029-15-8P 338790-77-5P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate for monomer; adamantyl-containing polymer for etching-resistant photoresist for semiconductor device fabrication)
- IT **67-63-0**, 2-Propanol, reactions 74-83-9, Methyl bromide, reactions **140-88-5**, Ethyl acrylate 431-03-8, Biacetyl 768-95-6, 1-Adamantanol 828-51-3, 1-Adamantanecarboxylic acid 3970-21-6, 2-Methoxyethoxymethyl chloride 5001-18-3, 1,3-Adamantanediol 10544-63-5, Ethyl crotonate 24556-17-0 99181-50-7, Tricyclo[3.3.1.1^{3,7}]decane-1,3,5-triol
RL: RCT (Reactant); RACT (Reactant or reagent)
(monomer from; adamantyl-containing polymer for etching-resistant photoresist for semiconductor device fabrication)
- IT **13416-69-8P**
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate for monomer; adamantyl-containing polymer for etching-resistant photoresist for semiconductor device fabrication)
- RN 13416-69-8 CAPLUS
- CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl- (9CI) (CA INDEX NAME)



IT 67-63-0, 2-Propanol, reactions 140-88-5, Ethyl acrylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (monomer from; adamantyl-containing polymer for etching-resistant
 photoresist for semiconductor device fabrication)
 RN 67-63-0 CAPLUS
 CN 2-Propanol (9CI) (CA INDEX NAME)



RN 140-88-5 CAPLUS
 CN 2-Propenoic acid, ethyl ester (9CI) (CA INDEX NAME)



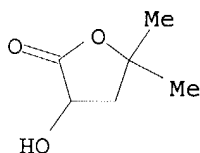
L9 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2001:207927 CAPLUS
 DOCUMENT NUMBER: 134:237064
 TITLE: Oxygenation of organic compounds
 INVENTOR(S): Ishii, Yasutaka; Nakano, Tatusya
 PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan
 SOURCE: Eur. Pat. Appl., 22 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|------------|
| EP 1085015 | A2 | 20010321 | EP 2000-119020 | 20000901 |
| EP 1085015 | A3 | 20031210 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| JP 2001070798 | A2 | 20010321 | JP 1999-248084 | 19990901 |
| US 6403521 | B1 | 20020611 | US 2000-653953 | 20000901 |
| PRIORITY APPLN. INFO.: | | | JP 1999-248084 | A 19990901 |

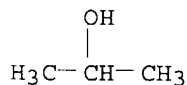
OTHER SOURCE(S): CASREACT 134:237064; MARPAT 134:237064

AB The title process comprises reaction of an organic compound with a O-containing reactant in the presence of a catalyst comprising a N-containing heterocycle and, e.g., a metallic compound. Thus, 9H-xanthene, 6-trifluoromethyl-1-hydroxybenzotriazole, acteyacetoneatomanganese(II), and HOAc were maintained 6h in an O atmospheric at 80° to give 52% xanthone.

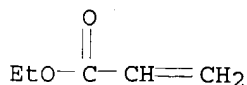
IC ICM C07D249-18
 ICS C07D253-08; B01J023-00
 CC 21-2 (General Organic Chemistry)
 IT 90-47-1P, Xanthone 486-25-9P, Fluorenone 502-44-3P,
 ε-Caprolactone 768-95-6P, 1-Adamantanol 828-51-3P,
 1-Adamantanecarboxylic acid 1660-04-4P, 1-Acetyladamantane 2984-50-1P,
 1,2-Epoxyoctane 5001-18-3P, 1,3-Adamantanediol 7575-82-8P,
 1-Nitroadamantane **13416-69-8P**, α-Hydroxy-γ,γ-
 dimethyl-γ-butyrolactone 276873-99-5P, Ethyl 2,4-dihydroxy-4-
 methylpentanoate 292050-25-0P
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP
 (Preparation)
 (oxygenation of organic compds.)
 IT **67-63-0**, 2-Propanol, reactions 86-73-7, Fluorene 92-83-1,
 9H-Xanthene 108-93-0, Cyclohexanol, reactions 108-94-1, Cyclohexanone,
 reactions 111-66-0, 1-Octene **140-88-5**, Ethyl acrylate
 281-23-2, Adamantane
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxygenation of organic compds.)
 IT **13416-69-8P**, α-Hydroxy-γ,γ-dimethyl-γ-
 butyrolactone
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP
 (Preparation)
 (oxygenation of organic compds.)
 RN 13416-69-8 CAPLUS
 CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl- (9CI) (CA INDEX NAME)



IT **67-63-0**, 2-Propanol, reactions **140-88-5**, Ethyl acrylate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxygenation of organic compds.)
 RN 67-63-0 CAPLUS
 CN 2-Propanol (9CI) (CA INDEX NAME)



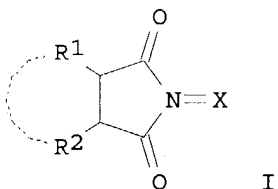
RN 140-88-5 CAPLUS
 CN 2-Propenoic acid, ethyl ester (9CI) (CA INDEX NAME)



DOCUMENT NUMBER: 133:60353
 TITLE: preparation of organic compounds with imide catalysts
 INVENTOR(S): Ishii, Yasutaka; Iwahama, Takahiro; Nakano, Tatsuya
 PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan
 SOURCE: PCT Int. Appl., 133 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|------------|
| WO 2000035835 | A1 | 20000622 | WO 1999-JP6891 | 19991209 |
| W: JP, KR, US | | | | |
| RW: DE, FR, GB | | | | |
| EP 1055654 | A1 | 20001129 | EP 1999-959710 | 19991209 |
| R: DE, FR, GB | | | | |
| PRIORITY APPLN. INFO.: | | | JP 1998-353621 | A 19981211 |
| | | | JP 1998-353622 | A 19981211 |
| | | | JP 1999-65651 | A 19990311 |
| | | | JP 1999-136340 | A 19990517 |
| | | | WO 1999-JP6891 | W 19991209 |

OTHER SOURCE(S): MARPAT 133:60353
 GI



AB Imide compound I (R1 and R2 are H, halogen alkyl, and etc., or are united to form a double bond or a ring, X is oxygen or hydroxyl) is a reaction catalyst for a stable radical-forming compound (including oxygen compds. having carbon-hydrogen bonds adjacent to the oxygen atom, carbonyl compds. and compds. having hydrocarbon groups bearing methyne carbon) with a radical-scavenging compound (including unsatd. compds., compds. having hydrocarbon groups bearing methyne carbon) in the presence of mol. oxygen. Thus, Et acrylate 3 mmol and 2-propanol 3 mL were reacted in the presence of N-hydroxyphthalimide 0.6 mmol and cobalt (II) acetate 0.015 mmol cobalt (III) acetylacetonate 0.045 mmol to give Et 2,4-dihydroxy-4-methylmetanate 35%, α -hydroxy- γ,γ -dimethyl- γ -butyrolactone 35% at the conversion of Et acrylate 81%.

IC ICM C07B037-02

ICS C07B037-04; C07B041-00; C07C002-82; C07C013-615; C07C029-32;
 C07C031-137; C07C067-333; C07C069-675; C07C069-716; C07C069-732;
 C07D307-32; C07D317-30; C08F020-28; C08L033-14; B01J031-02

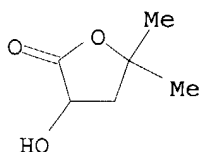
CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

IT 1660-04-4P 5682-42-8P **13416-69-8P** 26750-08-3P 39917-38-9P
 39917-40-3P 276874-06-7P 276874-08-9P 276874-13-6P 276874-15-8P
 276874-16-9P 276874-24-9P

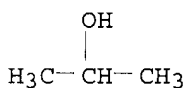
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(preparation of organic compds. with imide catalysts)

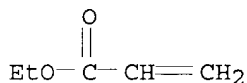
IT 67-63-0, Isopropanol, reactions 96-41-3, Cyclopentanol 97-63-2
 103-36-6, Ethyl cinnamate 111-27-3, 1-Hexanol, reactions 123-96-6,
 2-Octanol 140-88-5 141-05-9, Diethyl maleate 281-23-2,
 Adamantane 406-10-0 431-03-8, Biacetyl 464-07-3 493-01-6,
 cis-Decalin 497-26-7, 2-Methyl-1,3-dioxolane 623-91-6, Diethyl
 fumarate 646-06-0, 1,3-Dioxolane 768-95-6, Tricyclo[3.3.1.1^{3,7}]decan-1-
 ol 814-68-6, 2-Propenoyl chloride 2825-83-4 10544-63-5 44653-08-9
 92037-68-8 93430-22-9 276874-27-2 276874-28-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of organic compds. with imide catalysts)
 IT 13416-69-8P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation of organic compds. with imide catalysts)
 RN 13416-69-8 CAPLUS
 CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl- (9CI) (CA INDEX NAME)



IT 67-63-0, Isopropanol, reactions 140-88-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of organic compds. with imide catalysts)
 RN 67-63-0 CAPLUS
 CN 2-Propanol (9CI) (CA INDEX NAME)



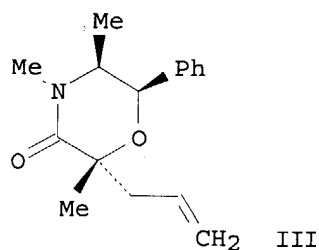
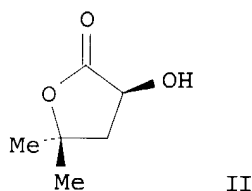
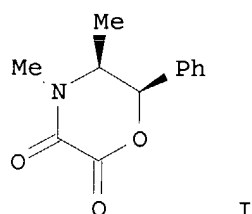
RN 140-88-5 CAPLUS
 CN 2-Propenoic acid, ethyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

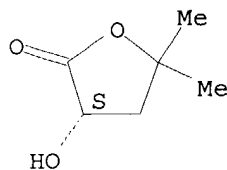
L11 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2002:831371 CAPLUS
 DOCUMENT NUMBER: 138:170157
 TITLE: Enantioselective synthesis of α -hydroxy- γ -
 butyrolactones from an ephedrine-derived
 morpholine-dione
 AUTHOR(S): Pansare, Sunil V.; Shinkre, Bidhan A.; Bhattacharyya,

CORPORATE SOURCE: Annyt
 Division of Organic Chemistry (Synthesis), National
 Chemical Laboratory, Pune, 411 008, India
 SOURCE: Tetrahedron (2002), 58(44), 8985-8991
 CODEN: TETRAB; ISSN: 0040-4020
 PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 138:170157
 GI



- AB An ephedrine-derived morpholine dione I is employed in the enantioselective synthesis of (S)- α -hydroxy- γ,γ -dimethyl- γ -butyrolactone (II) and (S)- α -hydroxy- γ -butyrolactone. A one-pot alkylation/allylation protocol for the stereoselective conversion of the dione to 2-alkyl-2-allyl morpholinones, e.g. III, key intermediates for α -alkyl- α -hydroxy- γ -butyrolactones, is described.
- CC 28-13 (Heterocyclic Compounds (More Than One Hetero Atom))
 Section cross-reference(s): 23, 27
- IT 52079-23-9P 207223-25-4P 207223-26-5P **497157-66-1P**
 497157-68-3P 497157-69-4P 497157-70-7P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (enantioselective synthesis of α -hydroxy- γ -butyrolactones from an ephedrine-derived morpholine-dione)
- IT **497157-66-1P**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (enantioselective synthesis of α -hydroxy- γ -butyrolactones from an ephedrine-derived morpholine-dione)
- RN 497157-66-1 CAPLUS
- CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl-, (3S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:654986 CAPLUS

DOCUMENT NUMBER: 137:192769

TITLE: Polymeric compound and resin composition for photoresist

INVENTOR(S): Ushirogouchi, Toru; Okino, Takeshi; Asakawa, Koji; Shida, Naomi; Funaki, Yoshinori; Tsutsumi, Kiyoharu; Takaragi, Akira; Inoue, Keizo

PATENT ASSIGNEE(S): Kabushiki Kaisha Toshiba, Japan; Daicel Chemical Industries, Ltd.

SOURCE: U.S., 24 pp.
CODEN: USXXAM

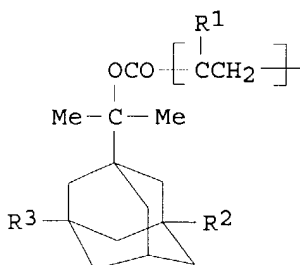
DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------------|------|----------|-----------------|----------|
| US 6440636 | B1 | 20020827 | US 2000-703677 | 20001102 |
| PRIORITY APPLN. INFO.: GI | | | US 2000-703677 | 20001102 |



I

AB A polymeric compound includes at least one monomeric unit of I (R1 = H, Me group; R2,3 = H, hydroxyl group). The polymeric compound may include the monomeric unit and at least one monomeric unit selected from monomeric units represented by II, III (R1 = H, Me group; R4,5 = H, hydroxy, oxo, carboxyl group; R4,5 are not concurrently hydrogen atoms; R7,8 = H, hydroxyl, oxo group). The polymeric compound have a high etching resistance in addition to satisfactory transparency, alkali-solubility, and adhesion.

IC ICM G03F007-004

NCL 430270100

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

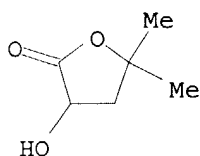
Section cross-reference(s): 35, 38

IT 13416-69-8P 56137-59-8P 61065-61-0P 115372-36-6P
 115522-15-1P 216581-76-9P 216581-85-0P 262608-27-5P 279218-76-7P
 280552-09-2P 300833-10-7P 324761-31-1P 324761-49-1P 324761-57-1P
 325991-61-5P 325991-67-1P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (preparation of polymeric compound and resin composition for photoresist)

IT 13416-69-8P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP
 (Preparation); RACT (Reactant or reagent)
 (preparation of polymeric compound and resin composition for photoresist)

RN 13416-69-8 CAPLUS

CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1987:439589 CAPLUS

DOCUMENT NUMBER: 107:39589

TITLE: α -Hydroxy- γ,γ -dimethyl- γ -butyrolactone

INVENTOR(S): Sawai, Takao; Kakimoto, Takehiko

PATENT ASSIGNEE(S): Nippon Synthetic Chemical Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|----------|
| JP 61282373 | A2 | 19861212 | JP 1985-124965 | 19850607 |

PRIORITY APPLN. INFO.: JP 1985-124965 19850607

AB The title compound (I), useful as an intermediate for drugs, was prepared from HCOCO₂H (II) and tert-BuOH (III). Thus, appr. 90% aqueous II, III, and benzene were mixed at 80-85° for 20 h, dehydrated, distilled at 100° from normal pressure to 20 Torr, and collected b.p. 135-140° to give I.

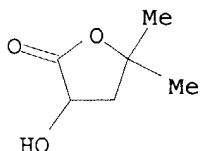
IC ICM C07D307-32

CC 27-6 (Heterocyclic Compounds (One Hetero Atom))
 Section cross-reference(s): 1

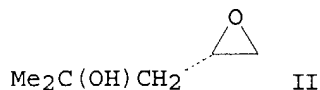
IT 13416-69-8P, α -Hydroxy- γ,γ -dimethyl- γ -butyrolactone
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, as intermediate for drugs)

IT 13416-69-8P, α -Hydroxy- γ,γ -dimethyl- γ -butyrolactone
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, as intermediate for drugs)

RN 13416-69-8 CAPLUS
 CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl- (9CI) (CA INDEX NAME)



L11 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1980:58987 CAPLUS
 DOCUMENT NUMBER: 92:58987
 TITLE: Pheromone synthesis. XXIV. Synthesis of optically active forms of ipsdienol and ipsenol. The pheromone components of Ips bark beetles
 AUTHOR(S): Mori, K.; Takigawa, T.; Matsuo, T.
 CORPORATE SOURCE: Dep. Agric. Chem., Univ. Tokyo, Tokyo, Japan
 SOURCE: Tetrahedron (1979), 35(8), 933-40
 CODEN: TETRAB; ISSN: 0040-4020
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB (R)-(-)- And (S)-(+)-ipsdienol (I) [(R)-(-)- and (S)-(+)-Me₂C:CH(OH)CH₂C(:CH₂)CH:CH₂, resp.] were prepared from (R)-(+)-glyceraldehyde acetonide and (R)-(+)-malic acid, resp., via the intermediate epoxide II and its enantiomer, resp. I is the naturally occurring form of this pheromone. Treating (S)- and (R)-isobutylethylene oxide with CH₂:C(MgCl)CH:CH₂ gave 32 and 50% (S)-(-)- and (R)-(+)-Me₂CHCH₂CH(OH)CH₂C(:CH₂)CH:CH₂, resp.

CC 30-10 (Terpenoids)

Section cross-reference(s): 12

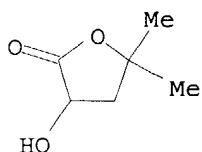
IT **13416-69-8P** 58081-05-3P 60856-90-8P 60856-91-9P
 60856-92-0P 60856-93-1P 60856-94-2P 60856-95-3P 60856-96-4P
 60856-97-5P 60856-98-6P 60990-96-7P 70005-88-8P 70005-89-9P
 70681-41-3P 72446-73-2P 72446-74-3P 72446-75-4P 72446-76-5P
 72446-77-6P 72446-78-7P 72446-79-8P 72446-80-1P **72496-35-6P**
 72496-36-7P 72496-37-8P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, as intermediate in ipsdienol preparation)

IT **13416-69-8P 72496-35-6P**

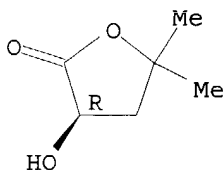
RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, as intermediate in ipsdienol preparation)

RN 13416-69-8 CAPLUS
 CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl- (9CI) (CA INDEX NAME)



RN 72496-35-6 CAPLUS
 CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl-, (R)- (9CI) (CA INDEX NAME)

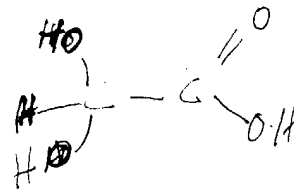
Absolute stereochemistry.



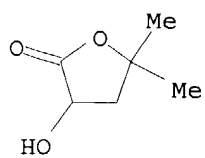
L11 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1972:539441 CAPLUS
 DOCUMENT NUMBER: 77:139441
 TITLE: α -Hydroxy- γ -butyrolactones
 INVENTOR(S): Klotmann, Georg; Mueller, Herbert
 PATENT ASSIGNEE(S): Badische Anilin- & Soda-Fabrik AG
 SOURCE: Ger. Offen., 7 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|----------|-----------------|----------|
| DE 2103686 | A | 19720817 | DE 1971-2103686 | 19710127 |
| DE 2103686 | B2 | 19790906 | | |
| DE 2103686 | C3 | 19800522 | | |

PRIORITY APPLN. INFO.: DE 1971-2103686 19710127
 GI For diagram(s), see printed CA Issue.
 AB Three title compds. (I, R = H or Me; R1 = Me or Ph), useful as intermediates for pharmaceuticals, were prepared by reaction of (HO)₂CHCO₂H with RR1C:CH₂.
 IC C07D
 CC 23-17 (Aliphatic Compounds)
 IT 13397-35-8P **13416-69-8P** 13983-60-3P
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)
 IT **13416-69-8P**
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)
 RN 13416-69-8 CAPLUS
 CN 2(3H)-Furanone, dihydro-3-hydroxy-5,5-dimethyl- (9CI) (CA INDEX NAME)



Solola 09/622,001



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